

**South River Watershed Restoration
Environmental Assessment
South River Field Office
EA # OR-105-00-05**

Date Prepared: August 2, 2000

**Bingham Creek Culvert Replacement
Decision Record**

Decision: It is my decision to authorize the replacement of two large culverts on BLM Road No. 29-9-26.0 in Sections 26 and 27 of T. 29 S., R. 9 W., W.M. These culverts have been identified for replacement by Field Office and District engineering personnel because of the risk of near term failure.

Culvert design and installation will incorporate Best Management Practices found in Appendix D, p. 134, of the *Roseburg District Record of Decision/Resource Management Plan* (ROD/RMP, June, 1995). Project design features and mitigation will include:

- Design of the culverts to pass a theoretical 100-year flood event
- Restriction of in-stream construction activities to the period between July 1 and September 15, during low summer stream flows, consistent with conditions of the General Authorization of the Oregon Division of State Lands
- Culverts will be arched pipes that will provide passage to resident fish populations both upstream and downstream, and will provide for the accumulation of natural streambed substrates and reduced flow velocities
- Grade structures will be installed below the culvert site in Section 27 to reduce channel downcutting and provide step pools for fish migration
- Stream flow will be diverted around the work sites during construction activities
- Placement of an absorbent boom to contain potential spillage of any petroleum products, prior to the commencement of work
- Endhaul of waste material to an authorized upland disposal site
- Revegetation of disturbed stream banks with willow and maple trees, and seeding with native grass
- Washing of equipment prior to move-in to prevent introduction of noxious weed seed and Port-Orford-cedar root rot disease

Rationale for the Decision:

The replacement of these culverts would not result in any undue environmental degradation. The project is consistent with objectives of the Aquatic Conservation Strategy contained in the ROD/RMP (pp. 20-21), specifically the maintenance and restoration of the sediment regime; maintenance and restoration of in-stream flows; maintenance and restoration of spatial and

temporal connectivity in the watershed; and maintenance and restoration of habitat. The action would also meet the objective stated in Appendix D, Best Management Practices “To preclude stream crossings from being a direct source of sediment to streams thus minimizing water quality degradation and provide unobstructed movement for aquatic fauna.”(ROD/RMP, p. 134). The implementation of this project analyzed under Alternative 1, the proposed action, of the environmental assessment would meet the stated objectives and the need to replace these culverts because of the near-term risk of failure. Alternative 2, the no action alternative would not meet the identified needs.

No Survey and Manage wildlife or plant species were located at the site of the culvert in Section 27. Surveys for Special Status plants were conducted at both culvert sites with negative results.

The BLM consulted with the National Marine Fisheries Service on the proposed action. In a Biological Opinion, dated June 4, 1999, the National Marine Fisheries Service found that the effects “. . . to anadromous salmonids or their habitat are expected to be minor in magnitude and short-lived in duration. Impacts resulting from the project will not prevent or impede long term recovery of habitat indicators at either the site or watershed scale.” No anadromous fish are present because of a natural barrier at Bradford Falls which is located over five miles downstream of the project area, further lessening the likelihood of any adverse effects.

No issues were identified by other State or Federal agencies, or by any tribal governments. The Environmental Assessment and Finding of No Significant Impact were made available for public review from June 28, 2000, through July 28, 2000. Comments were received from one organization. None of the comments constituted new information or issues not already considered in the Environmental Assessment and the ROD/RMP to which it is tiered. The BLM response to the comments and concerns raised follows:

1. A question was posed regarding the identification of culverts as a frequent and major source of sediment input to streams, with a request that this statement be qualified and quantified. Another question was raised relative to the applicability of the literature cited on the effects on sediment associated with culverts, specifically an environmental assessment on road decommissioning by the Umpqua Resource Area, Coos Bay District BLM.

Culverts have long been identified as a potential source of sediment input to streams whether as a consequence of improper installation, insufficient sizing to pass expected high flows, or culvert failure. Culverts not installed below stream bed level cause down-cutting of stream beds and an associated transport of sediments. Under-sized culverts also accelerate stream flow velocities through the culvert resulting in down-cutting and bank erosion at the out-flow of the culverts. These accelerated flow velocities also restrict passage by fish and other aquatic organisms.

Under-sized culverts are more likely to become plugged with debris resulting in reduction in capacity to pass high flows. Where culverts become plugged, flow is diverted overland where surface erosion of slopes and road surfaces can occur. Slopes and road fills may also become saturated, increasing the risk of their failure and subsequent debris torrents.

In the case of the failure of a culvert, entire road fills may be lost. This material further erodes stream banks and channels as it is transported downstream. Some representative engineering estimates of the amount of road fill material that could be washed away in the complete failure of various-sized culverts are included below, for point of illustration:

18-24 inch diameter pipe	100 + cubic yards
48-72 inch diameter pipe	450+ cubic yards
8-12 foot diameter pipe	1000+ cubic yards

The effects of culverts described in the Coos Bay District, BLM document pertained to the West Fork Smith River drainage. The discussion is relative to the effects of stream down-cutting and bank erosion resulting from under-sized or improperly installed culverts. The effects described in the document are considered to be representative of the effects of culverts on water quality and streams throughout the area covered by the Northwest Forest Plan. Additional references on the subject include Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitat (Meehan, W. R. American Fisheries Society Special Publication 19. 1991. p. 307) and Culvert Design and Performance on Forest Roads (Pyles, M. R., A. E. Skaugset and Terry Warhol. 12th Annual Council on Forest Engineering Meeting, Couer d'Alene, ID. August 27-30, 1989.)

2. An explanation was requested on the rationale for equating Oregon Department of Fish and Wildlife ratings of "fair" and "poor" to the "at risk" and "not properly functioning" determinations made in National Marine Fisheries Service Matrices of Pathways and Indicators (MPI).

The MPI was developed by the National Marine Fisheries Service in collaboration with the Bureau of Land Management, U.S. Forest Service and the U.S. Fish and Wildlife Service. The MPI evaluates sets of environmental elements or indicators relative to aquatic, riparian and watershed conditions. These conditions are generally categorized as "properly functioning", "at risk", or "not properly functioning".

Stream and aquatic habitat inventory data have been collected by the Oregon Department of Fish and Wildlife since 1993, and represents the most current and reliable information on aquatic and riparian conditions. This information is frequently used in describing and analyzing the anticipated effects of a proposed project. In order to make this information more usable to cooperating Federal and State agencies, a task force of fisheries biologists from the Umpqua Basin was assembled to develop a benchmark rating system known as the Habitat Benchmark matrix. This matrix was used to correlate the information obtained from Oregon Department of Fish and Wildlife stream inventories and habitat surveys with the National Marine Fisheries Service MPI. This correlation resulted in the equation of "excellent" and "good" ratings with "properly functioning", "fair" ratings with "at risk", and "poor" ratings with "not properly functioning".

Compliance and Monitoring:

Monitoring will be done in accordance with implementation monitoring objectives and requirements for Riparian Reserves, Water and Soils, Wildlife Habitat, Fish Habitat, and Special Status and SEIS Special Attention Species Habitat resources contained in the ROD/RMP, Appendix I (190-191, and 195-199).

Protest and Appeals Procedures: As outlined in 43 CFR § 5003 - Administrative Remedies, protests may be filed with the authorized officer within 15 days of the publication date of the Decision Notice in the News Review.

E. Dwight Fielder
Field Manager
South River Field Office

Date